Patent claims

1. A protective layer for protecting a component against corrosion and oxidation at high temperatures,

which is composed of the following elements (details in percent by weight):

0.5 to 2% rhenium,

15 to 21% chromium,

24 to 26% cobalt,

9 to 11.5% aluminum,

0.05 to 0.7% yttrium and/or at least one equivalent metal selected from the group consisting of scandium and the rare earth elements,

0.0 to 1% ruthenium,

remainder nickel and manufacturing-related impurities.

 The protective layer as claimed in claim 1, containing

1 to 1.8% rhenium,

16 to 18% chromium,

9.5 to 11% aluminum,

0.3 to 0.5% yttrium and/or an equivalent metal selected from the group consisting of scandium and the rare earth elements.

3. The protective layer as claimed in claim 1 or 2, containing

1.5% rhenium,

17% chromium,

25% cobalt,

10% aluminum,

0.4% yttrium and/or an equivalent metal selected from the group consisting of scandium and the rare earth elements.

- 4. The protective layer as claimed in claim 1, 2 or 3, which contains at most 6% by volume of chromium-rhenium precipitates.
- 5. The protective layer as claimed in claim 1, 2, 3 or 4, to which a thermal barrier coating has been applied.
- 6. A component, in particular a component of a gas turbine, which has a protective layer as claimed in one or more of claims 1 to 4 for protection against corrosion and oxidation at high temperatures.
- 7. A process for producing the protective layer as claimed in claim 1 by using powder, characterized in that the powder which is used has a trace element content of < 0.5%.</p>
- 8. The process as claimed in claim 7, characterized in that the carbon content of the powder is < 250 ppm.</p>
- 9. The process as claimed in claim 7 or 8, characterized in that the oxygen content of the powder is < 400 ppm.</p>
- 10. The process as claimed in claim 7, 8 or 9, characterized in that the nitrogen content of the powder is < 100 ppm.</p>

- 11. The process as claimed in claim 7, 8, 9 or 10, characterized in that the hydrogen content of the powder is < 50 ppm.
- 12. The process as claimed in claim 7, characterized in that the powder is sprayed.
- 13. The process as claimed in claim 7, characterized in that the powder is vaporized.